

An Airman's Perspective

Air, Space, and Cyberspace Strategy for the Pacific

Howie Chandler, General, USAF

America's opponents often base their demands on their perception of our ability to fight and win wars. . . . Above all, the US military must prevent major-power opponents from believing they can benefit from using their military power against America's vital interests.

—Michael W. Wynne
Secretary of the Air Force

WHILE THE United States has long been a Pacific nation, it has also been an air, space, and cyberspace nation. The interests and strategic challenges that concern our nation in this vast region are inexorably linked with our air, space, and cyberspace capabilities. Those enduring interests in the Pacific span the entire spectrum of economic, political, and security relations. America has paid a significant price in blood and treasure to fight aggression, deter potential adversaries, extend freedom, and maintain the peace and prosperity of this part of the world. Our engagement in this region has been critical to both regional and global security for many decades and will become increasingly so in the decades to come.¹

It is in the United States' interest to support and encourage the free movement of goods and services throughout the Asia-Pacific region—one that encompasses 105 million square miles, 39 countries, over four billion people, and an economic footprint that rivals the European Union. Not including the United States, Pacific nations comprise 37 percent of the gross world product and three of the top 10 global economies: China, Japan, and India. Approximately 33 percent of the world's oil and 20 percent

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of the world's sea-borne trade transit the Strait of Malacca.² Moreover, our economies are increasingly interrelated; Asian and American capital markets and our burgeoning cross-Pacific trade have great influence upon our respective economies.

While our posture in the Pacific clearly guarantees our interests for the time being, we cannot afford to rest on present successes at the expense of future security. Every strategic interest in the Pacific relies on some aspect of air, space, and cyberspace. Consequently, every threat to our interests challenges our cross-domain dominance. Some examples of this complex relationship include

- nuclear proliferation,
- the growing proliferation of sophisticated antiaccess weapons combined with the modernization of regional conventional forces,
- emerging and aggressive space capabilities including space denial systems and a growing space presence among regional powers,
- cyber activities—routine and benign, ambiguous, covert, and overt aggressive intrusions aimed at our economic, government, and military cyber systems, and
- irregular activities that range from full-blown insurgencies to sporadic terrorist attacks to weak governments that need partner assistance.

There can be little doubt that the regional security and economic prosperity we have enjoyed in the Pacific region over the recent decades have been underpinned by the stabilizing presence of the US military. Even so, some have suggested that the United States may be neglecting its security strategy in the Asia-Pacific because it has been too focused on Iraq, Afghanistan, and conflicts in other regions of the world. Others are concerned that overall US military strategy and resource decisions are overly devoted to addressing current threats at the expense of being prepared to deter and, if necessary, fight future adversaries that might threaten our national and international security in the years ahead. America can and must be able to do both.

From the Pacific Air Forces perspective, we address this complex strategic environment through three interdependent endeavors: Posture our Forces; Prepare and Provide Immediate and Responsive Combat Capability; and Promote Regional Security and Stability.

US Posture in the Pacific

While the Pacific region is not at war, neither is it at peace. No challenge illustrates this better than the challenge of nuclear proliferation. Efforts through the Six-Party process (North Korea, South Korea, China, Japan, Russia, and the United States) aim at the eventual denuclearization of North Korea, but for the present, the Democratic People's Republic of Korea regime remains reclusive and unpredictable and now has the potential to leverage nuclear, chemical, biological, and radiological weapons in attempts to threaten its neighbors and our allies.

The USAF, along with our regional partners, must maintain the lead in air, space, and cyberspace capabilities that monitor, deter, and defeat these types of threats. By 2012, the Republic of Korea (ROK) will assume wartime operational control of its forces while US Forces in Korea transfers to US Korea Command (USKORCOM) in a doctrinally supporting relationship to ROK armed forces.³ For its part, Japan will take more of a leading role for its air and missile defense by relocating its Air Defense Command to Yokota Air Base to strengthen early warning and bilateral command and control.⁴

These changes, backed by the speed, range, and flexibility of existing US airpower forces in the region coupled with a new USAF Intelligence, Surveillance, and Reconnaissance (ISR)-Strike Task Force based on Guam, have enabled a strategic rebalancing of our regional force posture to re-deploy large numbers of US ground forces to the mainland or within the theater. Thus, in the Pacific region, the Global Reach, Global Power, and Global Vigilance provided by the USAF enables diplomatic, economic, and informational initiatives aimed at countering nuclear proliferation.

High-end military competition is growing and will be a challenge to the United States. Fueled by a booming economy that delivers \$321 billion worth of goods to the United States, China is modernizing its military.⁵ The Chinese are rapidly moving forward with significant aerospace developments based on improvements to existing foreign technologies.

Like China, Russia's defense spending has significantly increased as the Russian Federation rises to become one of Europe's largest economies. A resurgent Russia is now flexing its military muscle as evidenced in Pacific air activities reminiscent of Cold War behavior. Between 2001 and 2007, Russia quadrupled defense spending and has been at the forefront of developing advanced fighter technology.⁶ Both its MiG and Sukhoi fighter programs continue to push the air superiority envelope.

In addition, modern advancements in integrated air defenses threaten the ability of US legacy fighters to dictate the time, place, and tempo of modern air warfare. Both Russia and China are ready and willing to export advanced conventional technologies to anyone willing to pay for them. These and other advances mean that the cross-domain dominance that US forces have come to depend on is no longer assured.

Dominance is the calculus of any combat, whether it involves a one-versus-one engagement or the final outcome of an air campaign. We must be equally concerned about the ability to operate freely in space and cyberspace. For the first time since the establishment of an independent Air Force, the joint war fighter's ability to move freely throughout the battlespace is in jeopardy because of these advancements in technology.

Competition for access, use, and dominance in space is heating up. China clearly recognizes the United States' dependence on space assets and is bolstering its counterspace capabilities. By testing an antisatellite (ASAT) weapon in January 2007, China demonstrated that it can threaten US space assets.

But the recent attention paid to Chinese space activities has concealed space proliferation activities across the Asia-Pacific region. For more than a year, headlines have indicated stepped-up space initiatives from a wide range of countries in the region. For example, South Korea announced plans to develop an indigenous space launch and sustainment capability, with \$3.6 trillion earmarked for satellite and launch development over the next 10 years.⁷ In July 2007, Russia launched a German military reconnaissance satellite into orbit.⁸ In December 2007, the Russian space force commander announced plans to launch a retransmitting satellite intended to collect and relay telemetry data on launch vehicle operations no later than 2009.⁹ Shortly thereafter, in January 2008, India announced that it intends to collaborate with Russia for an unmanned lunar expedition that will employ a rover-type vehicle to collect and analyze soil, atmospheric, and rock samples.¹⁰ Also, India recently completed a contract to launch an Israeli advanced synthetic aperture radar imaging satellite from its Sriharikota Launching Range.¹¹ And in February 2008, Russia announced plans to improve the accuracy of its Global Navigation Satellite System (GLONASS) global positioning constellation by establishing ground-monitoring stations. The long-range plans aim at reducing errors from the current 10 meters to centimeters.¹² Taken separately, each of these events portrays a robust effort on the part of several countries to expand their

space capabilities. Viewed in the context of the Pacific region and through the lens of the increasingly crowded space domain, what today may not be a security challenge could likely become one of the defining challenges for the region in the near future.

Cyberspace has joined surface, air, and space domains as a contested region. Our adversaries recognize America's dependence on cyberspace, the domain characterized by using the electromagnetic spectrum to store, modify, and exchange data via networked systems and associated physical infrastructure, as a center of gravity and are actively seeking ways to exploit our reliance upon it.¹³

The normal and usually benign activities that occur every minute of every day as part of commerce and information exchange provide concealment for ambiguous, covert, and overt aggressive intrusions aimed at our economic, government, and military cyber systems. The intelligence community assesses that both nonstate actors and nation-states, including Russia and China, have the technical capabilities to target and disrupt elements of cyberspace and to use it for intelligence collection.¹⁴

Since Thomas Friedman's book *The World Is Flat* described how cyber activities have compressed economic activities across the globe, corporations have intensified outsourcing programs to take advantage of the cyber domain to increase productivity and profits.¹⁵ A recent report indicated that Indian dominance in the outsourcing industry has begun to slow down as other countries compete in this fast-paced industry. According to one source, countries like China, Russia, and Brazil lead an estimated 30 other countries vying for contracts in the cyber-industrial marketplace.¹⁶ Japan has even begun recruiting in Burma for computer-savvy workers for its software, mobile phone, and other electronic and telecommunications devices.¹⁷ India expects to more than double its revenue from outsourcing and cyber activities to reach an estimated \$80 billion by 2011.¹⁸ These activities appear as a normal part of the global economy at the moment, but should competition increase, the previously benign economic activities could turn hostile as critical programs and infrastructure become vulnerable to cyber attacks. At the moment, the USAF has no assigned role in protecting commercial systems, but that could change dramatically as the cyber domain experiences more intense competition. Even now, political movements that coalesce in cyberspace migrate with alarming speed into real demonstrations and protest movements across the region.

We face irregular transnational security challenges that range from full-blown insurgencies to sporadic terrorist attacks to weak governments that need partner assistance. Global terrorism extends to this region of the world where terrorists seek financing, recruit followers, and continue to plot against the United States and our partners and allies. The phenomenon of suicide terrorism now prevalent in the Middle East and in other regions first arose in Sri Lanka, a country still embroiled in a 20-year-long battle against violent separatists. Piracy threatens the flow of commerce through the Strait of Malacca, which would not only affect the regional but the global economy as well. Avian flu and illicit narcotics continue to be serious challenges to governments throughout the region.

We know that long-term security cannot be achieved without respect for human rights, the rule of law, and strengthened government capacity. In Burma, a military junta continues to harass and oppress thousands of Burmese who seek a free and democratic government. Three military coups in seven years have resulted in a government in Fiji that continuously teeters on the brink of dissolution. And natural disasters will continue to strike, killing hundreds and leaving thousands homeless as we have recently seen in Bangladesh, Indonesia, and other countries in the Asia-Pacific region. Each of these areas presents air, space, and cyber forces with new and non-traditional challenges that demand the utmost in innovation, flexibility, and dedication—our Airmen are up to the task.

Providing Immediate and Responsive Capabilities

The keys to confronting the challenges presented by the complex Pacific region require presenting capabilities that embrace airpower's Global Reach, Global Power, and Global Vigilance.

In the first place, this requires the ability to command and control our forces. Throughout airpower history, Airmen have learned that the most effective way to employ air, space, and cyber power is under a single-theater joint force air component commander (JFACC).¹⁹ The USAF Command and Control Enabling Concept enhanced airpower by providing the JFACC with a standardized organization and set of capabilities under a component numbered air force (C-NAF) equipped with an air and space operations center (AOC) and an Air Force forces (AFFOR) staff. The purpose of the C-NAF is to provide a robust operational presentation

of air forces to each combatant commander. The complexity and the sheer size of the Pacific region make achieving this robust command and control construct a daunting task. Recent improvements have significantly enhanced the PACAF's ability to operate in all three domains.

The most mature and well-known Pacific C-NAF is Seventh Air Force in Korea, which operates the Capt Joseph McConnell AOC, where for over 30 years US and Korean Airmen have developed the model for conducting combined air and space operations for the US-ROK Combined Forces Command. Similarly, there is also a tailored AOC in Alaska to synchronize air, space, and cyber operations for the US Northern Command and North American Air Defense Command.

The stand-up of Thirteenth Air Force in Hawaii as the C-NAF for the PACOM AOR is a key element of Air Force strategy in the Pacific. Now, for the first time, PACOM has a standing JFACC to plan, command and control, and execute an integrated air, space, and cyber campaign for the theater and, with the C-NAF, the capability to lead a joint task force if required. The Maj Richard Bong AOC synchronizes all air, space, and cyber missions during peacetime with Soldiers and Sailors working side-by-side with Airmen every day, cementing habitual relationships with sister-service components. The 613th AOC will have close ties with the new Japanese bilateral air operations center being built at Yokota AB, Japan, and will also work with the Australian air operations center in Canberra.

With robust command and control capabilities, our air forces are postured for persistent involvement in the region to address the full spectrum of challenges described above. PACAF works closely with many of these nations through a robust set of theater security cooperation (TSC) events.²⁰ The PACAF TSC program promotes interoperability between air forces and establishes the relationships required to promote coalition partnerships, lessen the chance of conflict, and promote stability in the region.

Each year, PACAF participates in approximately 30 international exercises, ranging from bilateral exercises like Cope India to multilateral exercises like Red Flag-Alaska. Red Flag-Alaska leverages the tremendous joint training opportunities of the Pacific Alaska Range Complex and the newest Air Force aggressor squadron at Eielson AFB to provide the joint and combined war fighter with realistic combat rehearsal training in a stressful threat environment. Each summer at Red Flag-Alaska, PACAF leads the Executive Observer Program (EOP), where partner-nation senior airmen observe Red Flag activities firsthand and discuss coalition operations and training

requirements, which in turn allows PACAF to tailor future scenarios to meet those objectives. In 2007, 18 nations from air forces around the world attended the EOP.

In 2006, the CSAF expanded the Unified Engagement (UE) program beyond the Washington, DC, area to provide opportunities for engaging regional partners such as Australia, Japan, the Republic of Korea, Singapore, Malaysia, Indonesia, and India in a variety of bilateral and multilateral scenario vignettes, exercises, and discussions to further assist PACAF in promoting regional stability. These scenarios are set 10 to 20 years in the future with topics covering the full spectrum of conflict, including counterterrorism, humanitarian assistance/disaster relief, ISR, and irregular warfare. In Europe, NATO provides forums for similar discussions—in the Pacific, PACAF uses UE to promote regional security and stability with our partners across the region.

We must maintain high-end capabilities while conducting low-end operations. Low-end operations can often produce the goodwill that contributes to long-lasting stability in the region. For example, in February 2008, Hawaii- and Alaska-based C-17s delivered 225,000 pounds of food, medicine, and cold-weather supplies to Shanghai, China, to provide relief for Chinese citizens across 19 provinces during their most severe winter in 50 years. Within 18 hours of the secretary of defense's mission approval, 18 cargo pallets were delivered to mainland China.

Last year, PACAF deployed a C-17 with a joint team of 50 Air Force, Army, and Navy medics, dentists, and civil engineers to the remote Pacific islands of Vanuatu, Kiribati, and Nauru. In just 96 hours, the team cared for over 4,300 patients and trained over 1,000 local civilian, police, fire, customs, and nursing personnel on basic life support skills.²¹ In both cases, PACAF's rapid responsiveness and flexibility to provide much-needed materials and services delivered the lasting and positive effects that characterize partnership and goodwill.

Promoting Regional Security and Stability Air, Space, and Cyberspace Power's Role

When the PACOM commander describes the Pacific, he proclaims, "The guns are silent."²² Clearly, the Air Force, working with sister services and partner nations, has been a key driver of this silence. However, improve-

ments to USAF force structure and capabilities in this region are the only ways to guarantee this state of affairs continues in the future.

Global Vigilance operations in the Pacific cut across air, space, and cyber-space and are the eyes and ears of commanders, saving American lives and helping to defeat our enemies before they can act. These ISR operations also inform national security policy and allow the combatant commander to position combat capabilities when and where required. Recent ballistic missile and underground nuclear testing by North Korea, successful antisatellite operations by China, and the increased number of Russian long-range bomber missions in the Arctic have further emphasized the need to remain vigilant.

While ISR collection operations are critical, the culturally astute intelligence analyst's ability to provide the war fighter context for decision making is equally important. PACAF recently hired a State Department-trained foreign policy advisor for this very purpose. While the Air Force must continue to invest in more ISR assets to provide the appropriate level of coverage for the region, it must also continue the professional development of regional affairs specialists and support requirements for more human intelligence capability. PACAF is also collaborating with our regional partners to share information in areas of mutual concern. Without a multilateral alliance such as NATO, information sharing in the Pacific tends to occur bilaterally. Opening the information-sharing aperture to multiple nations was exactly the purpose of the Global Hawk Capabilities Forum, held in April 2008, when multiple Pacific nations came together to discuss how they could share information during humanitarian assistance or disaster relief scenarios.

Global Reach allows the Air Force to bridge the distances in the Pacific to deliver effects in operationally relevant timeframes of hours, not days or weeks. Basing USAF C-17 airlift assets in Alaska and Hawaii shows the increased emphasis the Air Force puts on improving our ability to respond more rapidly in this region. Bases in Alaska and Hawaii serve as critical components for humanitarian assistance, disaster relief, or combat operations. In addition, C-17s in Hawaii and Alaska have brought unprecedented levels of organic, flexible airlift to PACAF. The Army rarely travels lightly. Hawaii- and Alaska-based C-17s are strategically collocated with Army units, allowing PACOM to respond immediately with a joint force to any type of contingency worldwide.

Gen T. Michael Moseley said, “*Everything we do, whether it’s disaster relief, humanitarian relief, global vigilance, global strike, or global mobility—the thing that makes you ‘global’ is the jet tanker.*”²³ Given the size of the AOR, PACAF’s tanker aircraft enable our joint and combined military teams to project combat capability anytime, anywhere throughout the Pacific and around the world. KC-135 tankers permanently based in Alaska, Hawaii, and Japan, as well as rotational tankers on Guam, make up the air bridge required to move fighters, bombers, and other assets throughout the theater. In short, they allow us to dissuade, deter, and, if necessary, defeat any potential adversaries.

An equally important part of Global Reach for the joint team in the Pacific is the combination of communications, navigation, and positioning capability provided by Air Force satellites. Many of these satellites have outlived their designed endurance. We have begun the task of replacing some of our aging systems, and this April (2008) the first Wideband Global SATCOM-1 was launched, providing upgraded communications capability with coverage from PACOM to the West Coast of the mainland. Over the next 10 years, the Air Force must recapitalize all of these systems to maintain the advantage our space capability provides our nation.

USAF fighters and bombers attain strategic effects by striking anywhere in the world. Replacing aging fighters and fielding the next-generation, long-range bomber are a strategic imperative for the nation. As discussed earlier, over 30 nations operate fighter aircraft that are at parity or exceed the capabilities of our F-15 and F-16 fleet. In addition, our legacy fighters are increasingly expensive to maintain and less reliable to fly.


Our Air Force took the first critical step to enhance regional Global Power by placing three of its seven programmed USAF F-22 Raptor squadrons in the Pacific to provide immediate response to crises. The Air Force is also considering future basing of the F-35 Lightning II at key Pacific locations such as Eielson AFB, Alaska,²⁴ and Kadena AB, Japan.²⁵ It is important to note that the F-22 and F-35 work as a team, with the Raptor “kicking down the enemy’s door” for the Lightning II and other aircraft to undertake their respective missions. The F-22 serves as an air-dominance fighter with air-to-surface capabilities, while the F-35 will be an air-to-surface workhorse with the ability to defend itself . . . both having the ability to collect and share information. Both fighter programs must remain on track if the USAF strategy is to succeed in the Pacific.

Advances in integrated air defense systems throughout the world not only highlight deficiencies in our fighter force but also threaten our bomber force's ability to hold any target at risk, anywhere, anytime. Since 2004, the USAF has rotationally deployed a continuous bomber presence of B-1, B-2, or B-52 aircraft to Andersen AFB, Guam, to enhance regional security, demonstrate US commitment to the western Pacific, and provide integrated training opportunities. Their range and payload, combined with precision, lethality, survivability, and responsiveness, provide the backbone of this viable, strategic military deterrent. Eventually the technological gap our B-2 stealth bomber enjoys today will be bridged by advancements in antiaccess technologies. This, coupled with the fact that the current bomber fleet is becoming more expensive and difficult to maintain, highlights the need to develop the next-generation, long-range bomber by 2018. The new bomber will feature stealth, payload, and improved avionics sensor suites and will incorporate advanced technologies to ensure our bomber force's ability to fulfill our nation's and the combatant commanders' global requirements.

Finally, while Global Vigilance, Reach, and Power in the Pacific requires modernizing the fleet, it also requires new infrastructure on Guam. Guam has become an important piece of DoD force-structure transformation in the Pacific and is a critical part of the USAF strategic triangle of bases on US soil in Alaska, Hawaii, and Guam. In addition to the ISR-Strike Task Force at Andersen AFB, PACAF is in the process of standing up a contingency response group (CRG) composed of Red Horse civil engineers, security forces, combat communications, and airlift mobility support squadrons—all the elements required to open an airfield. PACAF consolidated these units from bases around the Pacific to create a single unit under one commander that will train together and be able to deploy rapidly worldwide. Overall, the Air Force buildup on Guam will stress the island's construction capacity from 2009 through 2014. The Guam infrastructure buildup will require a coordinated effort involving the government of Guam, the DoD, federal agencies, and private businesses to implement innovative cost-sharing, privatizing, and commercial solutions.²⁶

To overcome worldwide advancements in fighter technology and air defenses, the nation must enable the Air Force to field the F-35, combat search and rescue (CSAR)-X, and next-generation, long-range bombers to ensure our strength in the Pacific. The Air Force needs the new tanker fielded immediately in a theater where tankers make or break the ability

to deliver Global Vigilance, Reach, and Power. In addition, the Air Force needs to continue to focus its ISR, space, and cyber capabilities on the region. Finally, there are substantial investments in infrastructure required at PACAF bases, especially Andersen, which has become a key base for delivering sovereign options for the nation.

The Air Force has come a long way in the Pacific, both in how we posture our forces and how we have engaged with our partners. We are in a marathon—not a sprint—but we must also realize that to remain ahead we must maintain the pace. The relative calm we find today in the Pacific is due in large part to the resources and support provided to the military and the Air Force by America. This support has been critical to the Airmen before us who worked hard, and at times fought hard, to build the security and stability we enjoy today. We cannot afford to do less in the coming days as this region is too important to our national interest and our future as a great nation. 

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